LArIAT analysis meeting
MC analysis

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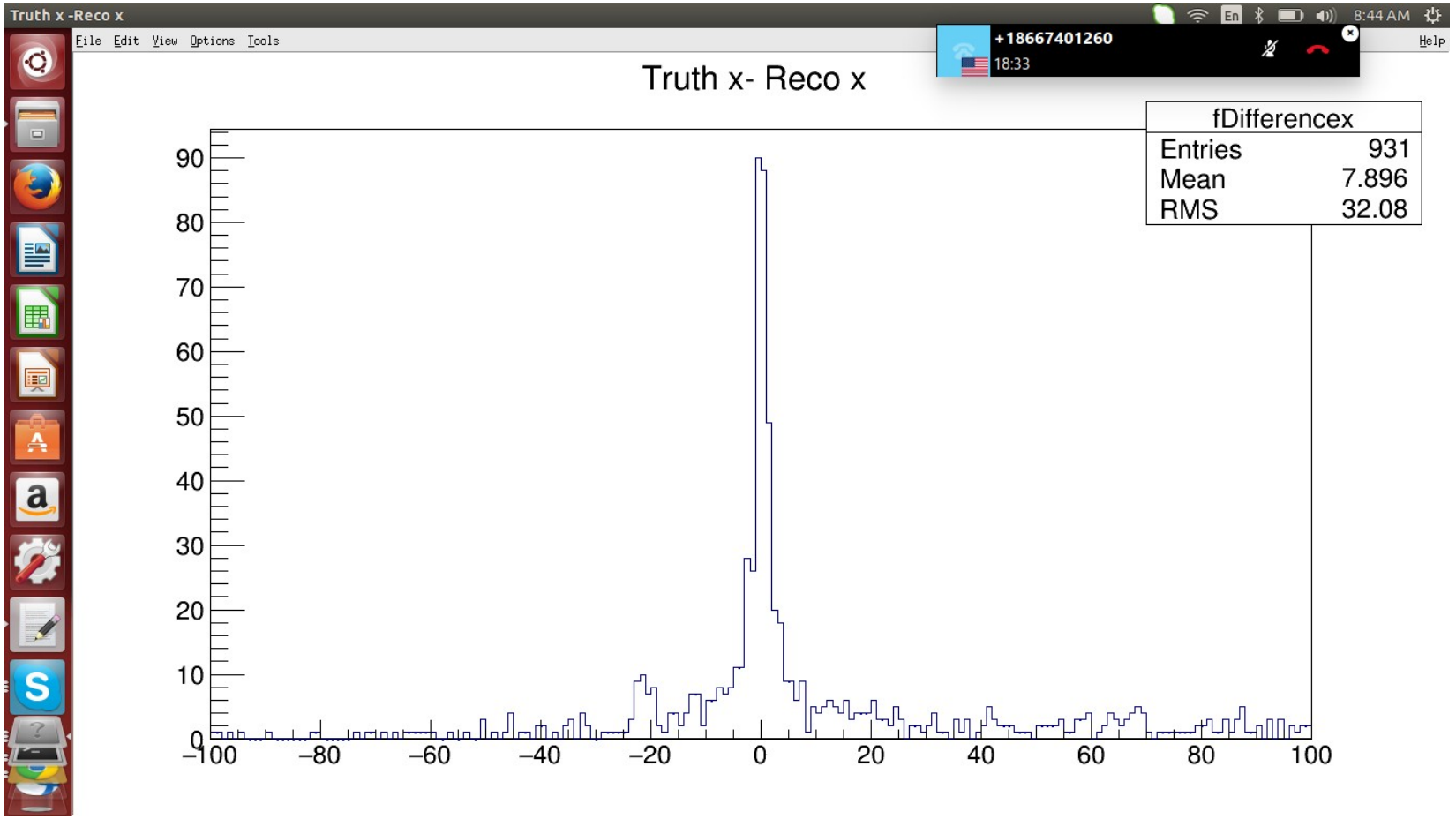
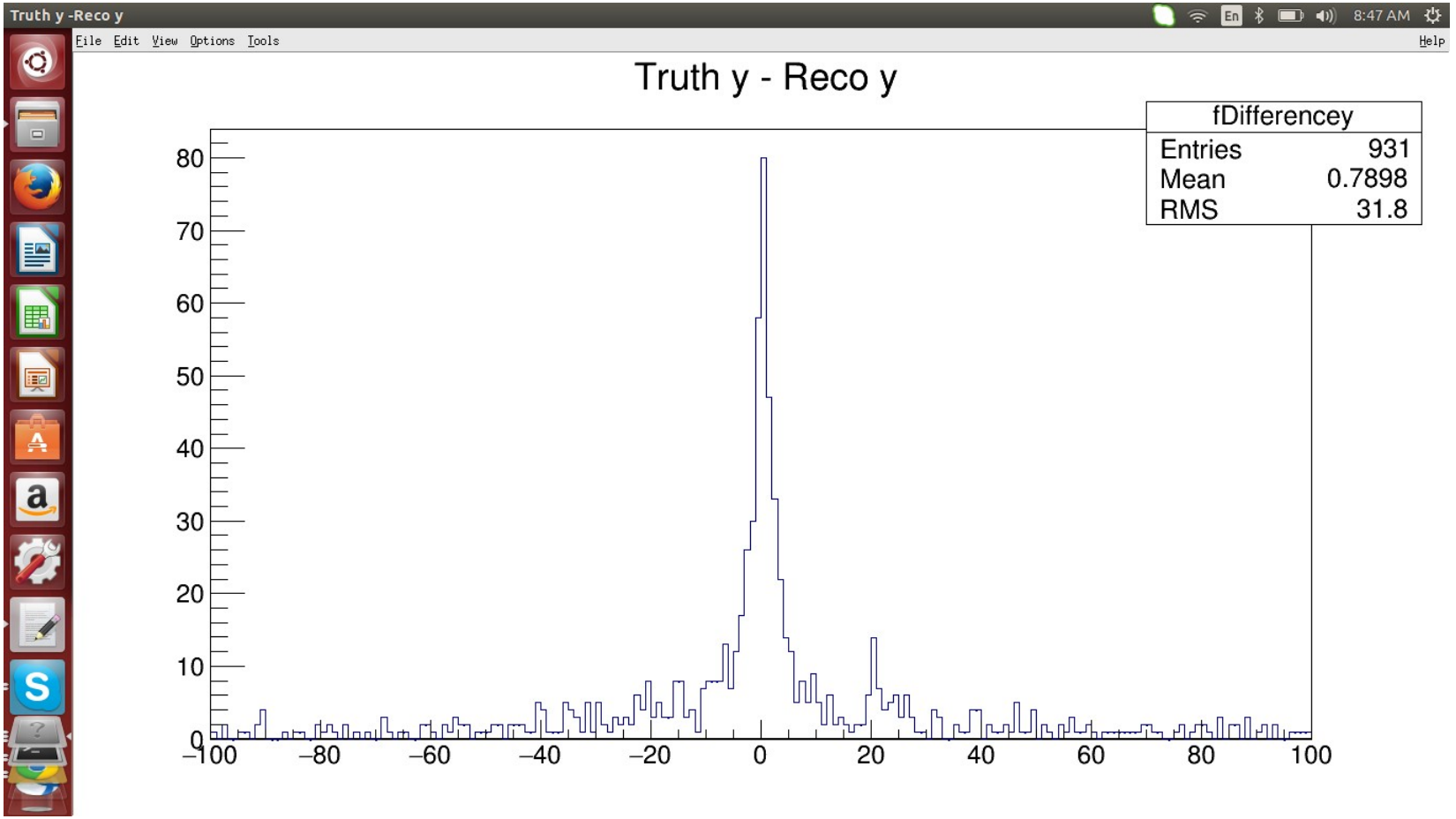
Systematic study on MC analysis

- Find the Delta X, Y, Z in the interaction vertex (from the primary particle) and the reconstructed interaction X, Y, Z
- Primary pion is selected
- The event must cross 4 cm within the TPC.
- There will be more than 1 track within the TPC.

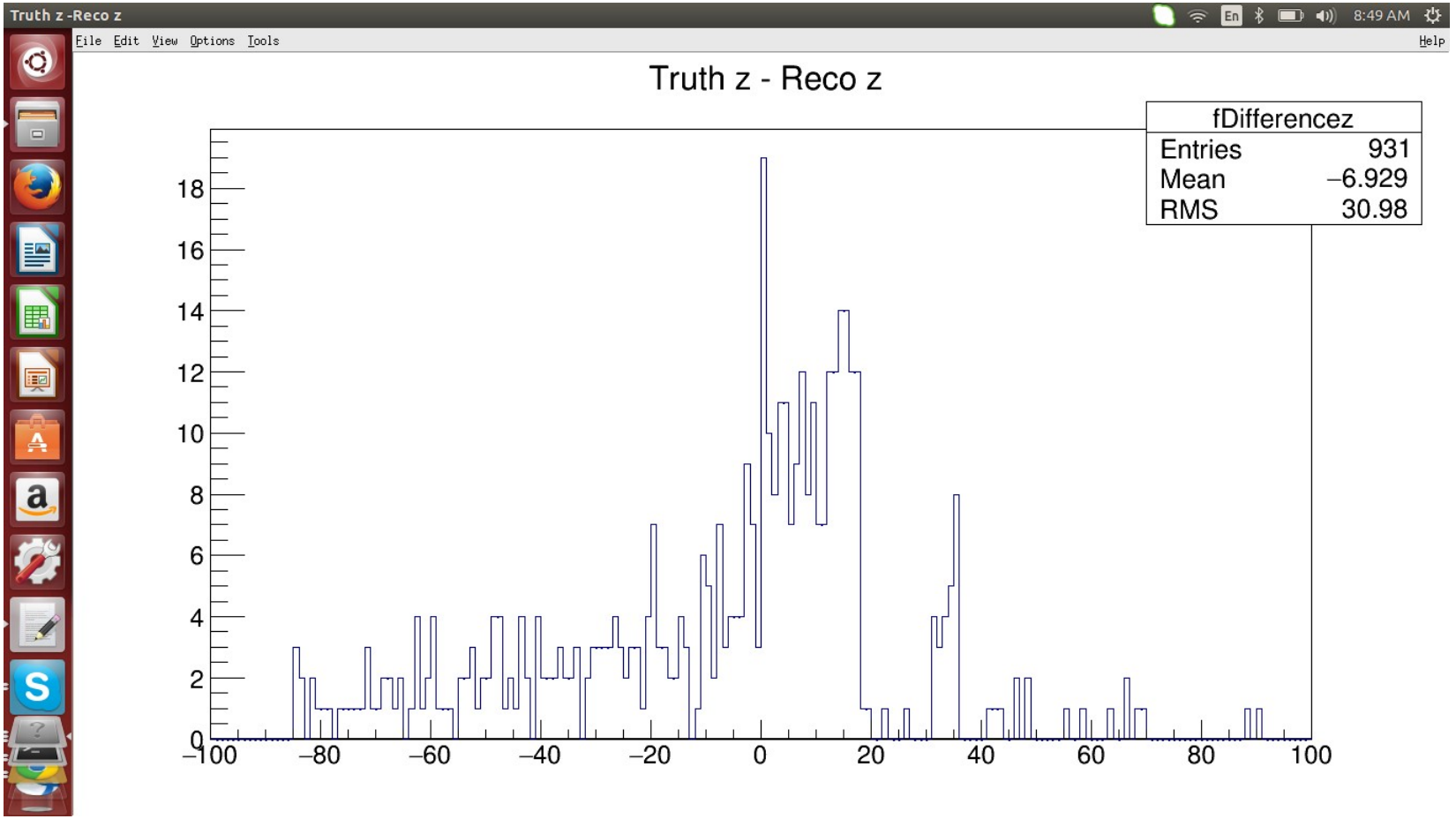
Delta X


Truth x -Reco x
File Edit View Options Tools
Help
8:44 AM
+18667401260
18:33
Truth x- Reco x
fDifferencex
Entries 931
Mean 7.896
RMS 32.08
90
80
70
60
50
40
30
20
10
0
−100
−80
−60
−40
−20
0
20
40
60
80
100

DeltaY


Truth y -Reco y
8:47 AM
File Edit View Options Tools
Help
Truth y - Reco y
fDifferencey
Entries 931
Mean 0.7898
RMS 31.8
80
70
60
50
40
30
20
10
0
−100
−80
−60
−40
−20
0
20
40
60
80
100

DeltaZ


Truth z -Reco z
8:49 AM
File Edit View Options Tools
Help
Truth z - Reco z
fDifferencez
Entries 931
Mean −6.929
RMS 30.98
18
16
14
12
10
8
6
4
2
0
−100
−80
−60
−40
−20
0
20
40
60
80
100

Next work

- Calculate daughter for a single primary and the process at the interaction point.
- DeltaX, DeltaY, DeltaZ as a function of different interaction process.
- Find the actual kinetic energy at the interaction point compared to the reconstructed kinetic energy at the interaction point.
- Count the number of events which have a pion interaction inside the TPC from MC and compare that to the number identified from Recostruction